

Appl. No. 09/994,709  
Amendment dated: November 6, 2003  
Reply to OA of: August 25, 2003

### **REMARKS**

Applicants have amended the specification and claims in order to more particularly define the invention taking into consideration the outstanding Official Action. The specification has been amended to correct the values of the ranges c and e in the formula in view of the working examples, see especially Example 1 on page 5 of Applicants' specification. The recording layer 2 is sputtered by using  $\text{Ag}_5\text{In}_5\text{Te}_{60}\text{Sb}_{30}$  as the target material, and the composition of the sputtered recording layer is analyzed by ICP as:  $\text{Ag}_{5.01}\text{In}_{4.91}\text{Te}_{60}\text{Sb}_{29.98}$ . This composition corresponds to the composition  $\text{A}_a\text{B}_b\text{C}_c\text{In}_d\text{M}_e$  shown in pending claim 1 wherein A is Ag ( $a=5$ ), B is Sb ( $b=30$ ), C is Te ( $c=60$ ), and M is absent ( $e=0$ ). Hence, Applicants have limited the ranges of c and e in claim 1 to " $8.0 < c \leq 60$ " and " $0 \leq e < 8$ ", respectively as fully supported by Applicants' specification. Similarly, the 2<sup>nd</sup> and 3<sup>rd</sup> pages of the specification concerning the ranges of c and e have been amended accordingly. These amendments do not introduce new matter into the application as would be appreciated by one of ordinary skill in the art to which the invention pertains.

Claims 1 and 6 have been amended and new claim 10 has been added to the application to more particularly define the invention and in view of the outstanding Official Action. As now amended claim 1 clearly defines the structural features of the claimed recording medium, such as the features (e.g. structures, materials and layer thickness, etc.) of the lower and upper dielectric layers, based on the specification and drawings as would be appreciated by one of ordinary skill in the art to which the invention pertains. It is believed that these amendments are in accord with the suggestion in the Official Action and obviate the rejections.

Claims 2-3, 5 and 8 have been canceled from the application without prejudice or disclaimer. The claims now remaining in the application are claims 1, 4, 6-7, 9 and 10. Applicants most respectfully submit that all the claims now present in the application are in full compliance with 35 U.S.C. §112 and are clearly patentable over the references of record.

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The rejections of claims 3-5 under 35 U.S.C. §112, first and second paragraphs, have been carefully considered but are most respectfully traversed in view of the amendments to the claims define the relationship of the layers from the substrate as fully supported by the specification and drawings. Applicants most respectfully submit that these amendments obviate the rejections under 35 U.S.C. 112. Accordingly, it is most respectfully requested that these rejections be withdrawn.

Each rejection of the claims under 35 U.S.C. §102(a) as being anticipated by or, in the alternative, the rejection of claims under 35 U.S.C. §103(a) as obvious over any combination of references has been carefully considered but is most respectfully traversed.

With respect to the anticipation rejection, Applicants wish to direct the Examiner's attention to MPEP § 2131 which states that to anticipate a claim, the reference must teach every element of the claim which must be arranged as claimed.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed.Cir. 1990).

Claim 1 as now amended specifies a rewritable optical information recording medium comprising, from bottom to top:

a substrate, which is made from glass plate or plastic material film;

a lower dielectric layer, which is made from a material selected from the group consisting of SiN, AlN, Ta<sub>2</sub>O<sub>5</sub>, ZnS, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, and ZnS/SiO<sub>2</sub> composite, and has a thickness of 600 to 2000Å;

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a recording layer, which is formed on said substrate and has the following composition:  $A_aB_bC_cIn_dM_e$

wherein A is gold or silver; B is Sb or Bi; C is Te or Se; M is an element selected from the group consisting of Ti, Zr, Hf, V, Nb, Ta, Mg, W, Mo, B, N, C, P and Si;  $0 < a < 13.0$ ;  $10 < b < 87.0$ ;  $8.0 < c < 60$ ;  $0 < d < 30.0$ ;  $0 < e < 8$ ; and  $a+b+c+d+e=100$  atom%, and has a thickness of 50 to 600 Å;

a first upper dielectric layer, which is formed on said recording layer, made from a material selected from the group consisting of SiN, AlN,  $Ta_2O_5$ , ZnS,  $SiO_2$ , or  $Al_2O_3$ , and has a thickness of 50 to 500 Å;

a second upper dielectric layer, which is formed on said recording layer, made from a material selected from the group consisting of SiN, AlN,  $Ta_2O_5$ , ZnS,  $SiO_2$ , or  $Al_2O_3$ , and has a thickness of 50 to 500 Å; and

a reflective layer, which is laminated on said recording layer and made from a material selected from the group consisting of gold, silver, copper, aluminum and alloys thereof and has a thickness of 1500Å to 4000Å.

Where in the references are all of the limitations now set forth in the claims now present in the application? Note especially the dimension of the in the Nakamura et al "958 patent for the corresponding layers which are in nanometers as compared to the claimed dimensions in angstroms, an order of magnitude different. Clearly all of the limitations of the claims now present in the application are not present in the references.

This equally true with respect to the teachings of the Tominaga reference and the anticipation rejection based on this reference as stated on page 5 of the Official Action. Accordingly, it is most respectfully requested that the anticipation rejections be withdrawn in view of the further amendments to the claims and the differences in dimensions.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references

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themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Clearly, the presently claimed invention has disclosed the enabling technical features in the claims, and none of the cited references provided by the Examiner disclose the rewritable optical information recording medium of the present invention comprising the specific structure defined in claim 1 and the claims dependent thereon.

The rejection of claims 1-3 and 5 denied under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. '958 has been carefully considered but is most respectfully traversed. As noted above, for a proper rejection on the grounds of *prima facie* obviousness, the necessary motivation must be provided in the prior art to make the necessary amendments to arrive at the claimed invention. There is no indication in the official action how this is done and only the conclusion that it would have been obvious to one of ordinary skill in the art to modify the invention of the examples cited by replacing the ALTi reflective layer with either Ag, AgCu and AgAu to gain improvements in reflectance is stated. Where is there any teaching in the reference to provide the necessary motivation to make the changes necessary to arrive at the claimed invention. Absent this teaching, the rejection should be withdrawn.

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The rejection of claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over Yuzuhara et al. JP 11-070738 has been carefully considered but is most respectfully traversed. Again, it is urged in the official action that would have been obvious to one skilled in the art to modify the invention of the examples cited by replacing the 100 nm ALTi reflective layer with a thicker layer such as 150 nm with a reasonable expectation of achieving comparable results. However, there is no explanation of the motivation to make the layer thicker in view of the specific teaching in the reference. Accordingly, it is most respectfully requested that this rejection be withdrawn.

The rejection of claims 1-3 and 5-9 under 35 U.S.C. § 103(a) as being unpatentable over Yamada et al. has been carefully considered but is most respectfully traversed. Applicants have carefully noted the specifically cited paragraphs in the official action.

[0085] relates to examples 1-8 of a phase-change recording medium was prepared including the layers and thickness. However, it is only as a result of using applicant's specification that the necessary selection can be made to arrive at the presently claimed invention. Again, the motivation is conclusionary as indicated in the official action as simply being obvious to one of ordinary skill in the art to which the invention pertains. That is, that the necessary modifications may be made, but this is only by using impermissible hindsight. However, the motivation is not provided and accordingly it is most respectfully requested this rejection be withdrawn.

The rejection of claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over either Yamada et al. EP 1058249, Yuzuhara et al. JP 11-070738, Tominaga et al. JP 10-166738 or Nakamura et al. '958 in view of Uno et al. has been carefully considered. This is several additional rejections, the primary references of which have already been discussed and do not render the presently claimed invention *prima facie* obviousness. Uno does not overcome the deficiencies of the primary references.

It is urged that Uno et al. '690 teaches barrier layer placed between protective layers. It is concluded that it would have been obvious to modify the invention of either of the primary references by adding an additional layer between the recording and the


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dielectric layer to prevent unwanted fusion between the dielectric layers and the recording layer. However, the reasoning in support of this aspect of the rejection is not discussed in the Official Action. Applicant most respectfully submit that the true motivation for this rejection is found in applicant's specification which may not be used as a teaching reference. Moreover, obvious to try is not the standard of obviousness under 35 U.S.C. § 103. Accordingly, it is most respectfully requested that this aspect of the rejection be withdrawn.

The rejection of claims 1-9 under 35 U.S.C. § 103 as being unpatentable over either Yamada et al., Yuzuhara et al., Tominaga et al. or Nakamura et al. in view of Yoshinari et al. or Kawahara et al. has also been carefully considered but it is most respectfully traversed for the above reasons. Moreover, the official action relies upon motivation to optimize thermal properties. Even with the optimization of thermal properties, the presently claimed invention is not *prima facie* obvious from the combination of references. Accordingly, it is most respectfully requested that this rejection be withdrawn.

In view of the above comments and further amendments to the specification and claims, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,  
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